

Infant Mortality

An Overview: 2004

Infant Deaths	
Number	93
Rate per 1,000 Live Births	8.2
Neonatal Deaths	
Number	57
Rate per 1,000 Live Births	5.0
Postneonatal Death	
Number	36
Rate per 1,000 Live Births	3.2
Fetal Deaths	
Number	34
Rate per 1,000 Live Births + fetal deaths	3.0

During 2004, there were 93 South Dakota resident infant deaths reported for an infant mortality rate of 8.2 per 1,000 live births. In

comparison, there were 73 infant deaths in 2003, with the infant mortality rate of 6.6 per 1,000 live births. Caution should be used when comparing these annual rates, because the number of South Dakota resident births creates a relatively small denominator to determine infant mortality rates; a small change in the number of infant deaths can result in a relatively large rate change. For example, as Table 22 displays and Figure 8 illustrates, large downward spikes occur in 1996 and 2000. Decreases of 39 infants from 1995 to 1996 and 37 infants from 1999 to 2000 caused large downward spikes in infant mortality rates. Therefore, infant mortality rates should be monitored over a period of time.

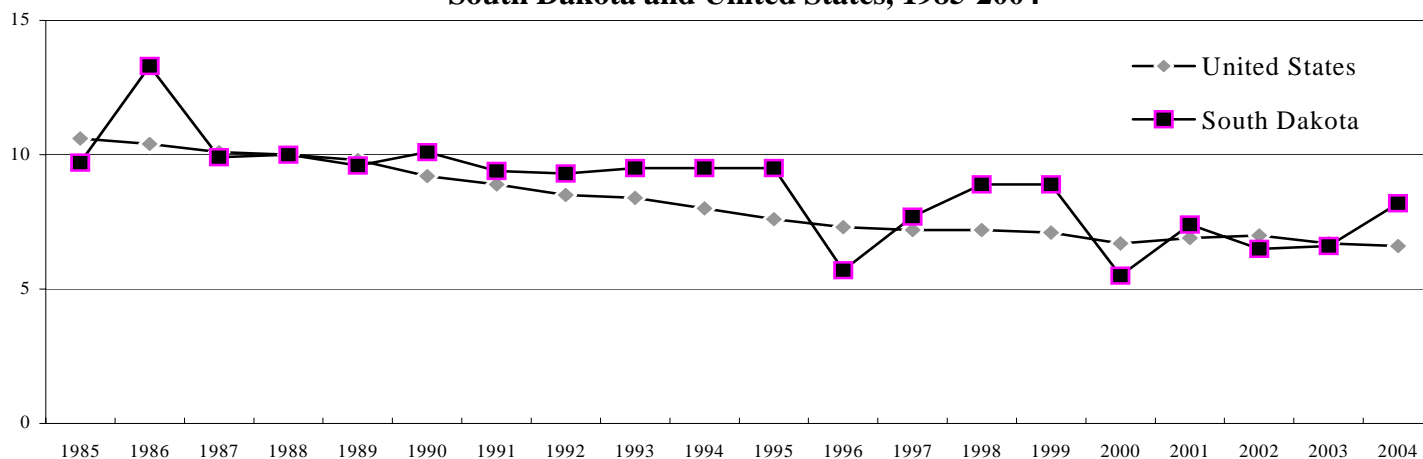
Table 22
Resident Infant Deaths and Infant Mortality Rates,
South Dakota and United States, 1985-2004

Year	United States		South Dakota	
	Number	Mortality Rate	Number	Mortality Rate
2004	*27,300	*6.6	93	8.2
2003	*27,500	*6.7	73	6.6
2002	28,034	7.0	70	6.5
2001	27,568	6.8	78	7.4
2000	27,200	6.7	57	5.5
1999	27,937	7.1	94	8.9
1998	28,371	7.2	92	8.9
1997	28,045	7.2	78	7.7
1996	28,487	7.3	60	5.7
1995	29,583	7.6	99	9.5
1994	31,710	8.0	100	9.5
1993	33,466	8.4	102	9.5
1992	34,628	8.5	102	9.3
1991	36,766	8.9	103	9.4
1990	38,351	9.2	111	10.1
1989	39,655	9.8	106	9.6
1988	38,910	10.0	112	10.0
1987	38,380	10.1	114	9.9
1986	38,891	10.4	155	13.3
1985	40,030	10.6	118	9.7

Note: * U.S. 2004 and 2003 data are provisional.
Infant mortality rates are per 1,000 live births.

Source: National Center for Health Statistics
South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 8
Resident Infant Mortality Rates
South Dakota and United States, 1985-2004



Note: Rate Per 1,000 Live Births.

U.S. 2004 and 2003 data are provisional.

Source: National Center for Health Statistics

South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 23 lists the overall leading causes of infant death in 2004. The leading causes of infant death can be broken down as follows: certain conditions in perinatal period, 39.8

percent; congenital malformations, 34.4 percent; sudden infant death syndrome, 8.6 percent; and accidents for 5.4 percent.

Table 23
South Dakota Resident Leading Causes of
Infant Death, 2004

Total Deaths	93
Causes of Death	
Certain Conditions in Perinatal Period.....(P00-P96)	37
Disorders related to short gestation and low birth weight.....(P07)	6
Newborn affected by complications of placenta, cord, and membranes.....(P02)	4
Newborn affected by maternal complications of pregnancy...(P01)	4
Atelectasis.....(P28.0-P28.1)	4
Hydrops fetalis not due to hemolytic disease.....(P83.2)	4
All other conditions originating in perinatal period	15
Congenital Malformations, Deformations and Chromosomal Abnormalities.....(Q00-Q99)	32
Congenital malformations of heart.....(Q20-Q24)	8
Edward's syndrome.....(Q91.0-Q91.3)	5
All other congenital anomalies	19
Sudden Infant Death Syndrome.....(R95)	8
Accidents.....(V01-X59)	5
All Other Causes	11

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

There were 57 neonatal deaths (deaths occurring to infants from birth through 27 days old) for a rate of 5.0 deaths per 1,000 live births. There were 36 postneonatal deaths (deaths occurring to infants 28 days to 1 year of age) for a rate of 3.2 deaths per 1,000 live births. In comparison, the 2003 neonatal and postneonatal rates were 3.2 and 3.4 per 1,000 live births, respectively. The number of fetal deaths decreased from 36 in 2003 to 34 in 2004, with a corresponding decrease in the fetal mortality rate from 3.3 (per 1,000 live births plus fetal deaths) in 2003 to 3.0 in 2004.

Infant Mortality by Race

Table 24 indicates that from 2003 to 2004, the number of South Dakota resident infant deaths increased for both whites and American Indians. As a result, the infant mortality rate per 1,000 live births rose for both whites and American Indians in 2004. American Indian infant mortality rates were also significantly higher than whites were for the 20 year total.

Table 24
South Dakota Resident Infant Deaths and Mortality Rates
by Infant's Race, 1985-2004

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2004	62	6.9	28	13.3	93	8.2
2003	43	5.0	27	12.9	73	6.6
2002	41	4.7	26	14.4	70	6.5
2001	52	6.1	25	14.1	78	7.4
2000	36	4.3	19	11.3	57	5.5
1999	66	7.6	24	14.4	94	8.9
1998	61	7.3	29	16.9	92	8.9
1997	45	5.3	30	19.5	78	7.7
1996	39	4.5	20	12.3	60	5.7
1995	69	7.9	30	19.2	99	9.5
1994	66	7.5	33	21.5	100	9.5
1993	67	7.6	35	20.3	102	9.5
1992	69	7.6	32	18.4	102	9.3
1991	73	8.1	25	15.0	103	9.4
1990	77	8.4	33	19.8	111	10.1
1989	64	7.0	40	22.8	106	9.6
1988	87	9.3	25	14.7	112	10.0
1987	76	7.9	36	21.2	114	9.9
1986	100	10.2	52	31.0	155	13.3
1985	89	8.6	29	17.2	118	9.7
1985-2004	1,282	7.2	598	17.4	1,917	8.8

Note: Failure of the races to add to the total is due to other and unknown races.

Infant mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

When analyzed by race, Table 25 indicates that the South Dakota resident neonatal mortality rate per 1,000 live births increased slightly for American Indians while it

doubled for whites from 2003 to 2004. The American Indian infant mortality rate is significantly higher than whites for the 20 year total.

Table 25
South Dakota Resident Neonatal Deaths and
Mortality Rates by Infant's Race, 1985-2004

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2004	44	4.9	12	5.7	57	5.0
2003	22	2.5	11	5.3	35	3.2
2002	24	2.8	12	6.6	38	3.6
2001	27	3.2	9	5.1	37	3.5
2000	24	2.9	7	4.2	32	3.1
1999	43	5.0	10	6.0	57	5.4
1998	34	4.1	11	6.4	46	4.5
1997	28	3.3	10	6.5	40	3.9
1996	20	2.3	11	6.7	31	3.0
1995	40	4.6	14	9.0	54	5.2
1994	37	4.2	20	13.0	57	5.4
1993	37	4.2	16	9.3	53	4.9
1992	44	4.8	12	6.9	56	5.1
1991	43	4.7	13	7.8	59	5.4
1990	43	4.7	15	9.0	58	5.3
1989	34	3.7	16	9.1	51	4.6
1988	56	6.0	6	3.5	62	5.5
1987	43	4.5	13	7.7	57	5.0
1986	60	6.1	23	13.7	84	7.2
1985	54	5.2	10	5.9	64	5.3
1985-2004	757	4.2	251	7.3	1,028	4.7

Note: Failure of the races to add to the total is due to other and unknown races.

Neonatal mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 26, below, indicates that the postneonatal mortality rate per 1,000 live births decreased for white infants and remained the same for American Indian

infants from 2003 to 2004. The American Indian infant mortality rate is significantly higher than whites in 2004 and for the 20 year total.

Table 26
South Dakota Resident Postneonatal Deaths and
Mortality Rates by Infant's Race, 1985-2004

Year	Race of Infant				Total	
	White		American Indian			
	Number	Rate	Number	Rate	Number	Rate
2004	18	2.0	16	7.6	36	3.2
2003	21	2.4	16	7.7	38	3.4
2002	17	2.0	14	7.8	32	3.0
2001	25	2.9	16	9.0	41	3.9
2000	12	1.4	12	7.1	25	2.4
1999	23	2.7	14	8.4	37	3.5
1998	27	3.2	18	10.5	46	4.5
1997	17	2.0	20	13.0	38	3.7
1996	19	2.2	9	5.5	29	2.8
1995	29	3.3	16	10.2	45	4.3
1994	29	3.3	13	8.5	43	4.1
1993	30	3.4	19	11.0	49	4.6
1992	25	2.8	20	11.5	46	4.2
1991	30	3.3	12	7.2	44	4.0
1990	34	3.7	18	10.8	53	4.8
1989	30	3.3	24	13.7	55	5.0
1988	31	3.3	19	11.2	50	4.5
1987	33	3.4	23	13.5	57	4.9
1986	40	4.1	29	17.3	71	6.1
1985	35	3.4	19	11.3	54	4.4
1985-2004	525	2.9	347	10.1	889	4.1

Note: Failure of the races to add to the total is due to other and unknown races.

Postneonatal mortality rates are per 1,000 live births.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 27 shows the leading causes of infant death from 2000 to 2004. The overall leading cause of infant death for South Dakota residents from 2000 to 2004 was certain conditions in perinatal period. These conditions include disorders related to short gestation and low birth weight, newborn affected by complications of placenta, cord, and membranes, and newborn affected by maternal complications of pregnancy. Certain conditions in perinatal period accounted for

34.8 percent of all infant deaths in South Dakota from 2000 to 2004. When analyzed by race, the leading cause of death for both white and American Indian infants was certain conditions in perinatal period. Certain conditions in perinatal period comprised 92 white infant deaths or 39.3 percent of all white infant deaths, while it accounted for 33 American Indian infant deaths or 26.4 percent of all American Indian infant deaths.

Table 27
South Dakota Resident Infant Deaths by Cause of Death and Race, 2000-2004

	Total	Race	
		White	American Indian
Total	371	234	125
Causes of Death			
Certain Conditions in Perinatal Period.....(P00-P96)	129	92	33
Disorders related to short gestation and low birth weight.....(P07)	33	18	12
Extremely low birth weight or extreme immaturity.....(P07.0-P07.2)	25	15	8
Newborn affected by complications of placenta, cord, and membranes.....(P02)	15	9	5
Newborn affected by maternal complications of pregnancy.....(P01)	14	11	3
All other conditions originating in the perinatal period	42	39	5
Congenital Malformations, Deformations, and Chromosomal Abnormalities(Q00-Q99)	106	80	24
Congenital malformations of heart.....(Q20-Q24)	24	18	6
Congenital malformations and deformations of musculoskeletal system, limbs, and integument(Q65-Q85)	14	13	*
All other congenital anomalies	68	49	17
Sudden Infant Death Syndrome.....(R95)	59	25	31
Accidents.....(V01-X59)	21	10	11
All Other Causes	56	27	26

Note: Numbers following cause of death are ICD-10 codes.
Failure of the races to add to the total is due to other and unknown races.
*Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Birth Weight

Low birth weight infants, those who are less than 2,500 grams, accounted for 53.4 percent of the South Dakota resident infant deaths from 2000 to 2004. When separated by age, 80.4 percent of the resident neonatal

deaths and 22.1 percent of all resident postneonatal deaths from 2000 to 2004 were low birth weight infants.

Table 28
South Dakota Resident Neonatal and Postneonatal Infant Deaths by Race of Infant and Birth Weight, 2000-2004

Race of Infant	All Birth Weights	Birth Weight in Grams	
		2499 or less	2500 +
All Races	371	198	172
Neonatal	199	160	38
White	141	112	28
American Indian	51	43	8
Post-Neonatal	172	38	134
White	93	22	71
American Indian	74	16	58

Note: Failure of the races to add to the total is due to other and unknown races.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 29 below, displays infant mortality rates by birth weight. The highest infant mortality rate is for babies born who weigh less than 1,500 grams with a rate of 259.0. The second highest occurs at 1,500-1,999

grams with a rate of 33.8. The third highest rate occurs at 2,000-2,499 grams with a rate of 24.0. The highest three rates occur below 2,500 grams which is considered low birth weight babies.

Table 29
South Dakota Resident Infant Mortality Rates by Birth Weight, 2004

Birth Weight (in Grams)	Births	Infant Deaths	Infant Mortality Rate
Total	11,339	93	8.2
<1500	139	36	259.0
1500-1999	148	5	33.8
2000-2499	500	12	24.0
2500-2999	1,794	18	10.0
3000-3499	4,219	13	3.1
3500+	4,534	8	1.8

Note: Infant mortality rates are per 1,000 live births.

Failure of births and infant deaths to add to total is due to unknown birth weights.

Source: South Dakota Department of Health, Office of Data Statistics, and Vital Records

Infant Mortality and Prenatal Care

Table 30 below, displays infant mortality rates by prenatal care. The highest infant mortality rate, 59.4, occurred when mothers did not have prenatal care.

In comparison, when mothers received prenatal care in the first trimester the infant mortality rate was only 6.9.

Table 30
South Dakota Resident Infant Mortality Rates by Prenatal Care, 2004

Trimester Prenatal Care Began	Births	Infant Deaths	Infant Mortality
Total	11,143	87	7.8
First Trimester	8,635	60	6.9
Second Trimester	2,021	16	7.9
Third Trimester	351	3	8.5
No Prenatal Care	101	6	59.4

Note: Infant mortality rates are per 1,000 live births.

For purposes of calculating infant mortality rates by prenatal care, multiple births and deaths (twins, triplets, etc) are counted only as a single birth and death.

Failure of births and deaths to add to the total is due to unknown trimester prenatal care began.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Gestation Period

Table 31 below, displays infant mortality rates by gestation period. The highest infant mortality rate occurred at less than 30 weeks with a rate of 336.5. At 30 to 32

weeks of gestation, the infant mortality rate fell considerably to 67.3 and continued to decline as the weeks of gestation increased.

Table 31
South Dakota Resident Infant Mortality Rates by Gestation Period, 2004

Weeks of Gestation	Births	Infant Deaths	Infant Mortality
Total	11,339	93	8.2
<30 Weeks	104	35	336.5
30-32 Weeks	104	7	67.3
33-34 Weeks	179	6	33.5
35 Weeks	207	3	14.5
36 Weeks	455	5	11.0
37 Weeks	932	5	5.4
38 Weeks	1,981	8	4.0
39 Weeks	3,124	14	4.5
40+ Weeks	4,230	10	2.4

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to the total is due to unknown weeks of gestation.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Infant Mortality and Tobacco Use

Table 32 below, displays infant mortality rates by tobacco use of the mother. Mothers who reported they did use tobacco while pregnant had an infant mortality rate

of 12.8, while mothers who reported they did not use tobacco while pregnant had an infant mortality of 7.2.

Table 32
South Dakota Resident Infant Mortality Rates by Tobacco Use of Mother, 2004

Tobacco Use of Mother	Births	Infant Deaths	Infant Mortality
Total	11,339	93	8.2
Yes	2,103	27	12.8
No	9,224	66	7.2

Note: Infant mortality rates are per 1,000 live births.

Failure of births to add to the total is due to unknown tobacco use of the mother.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

